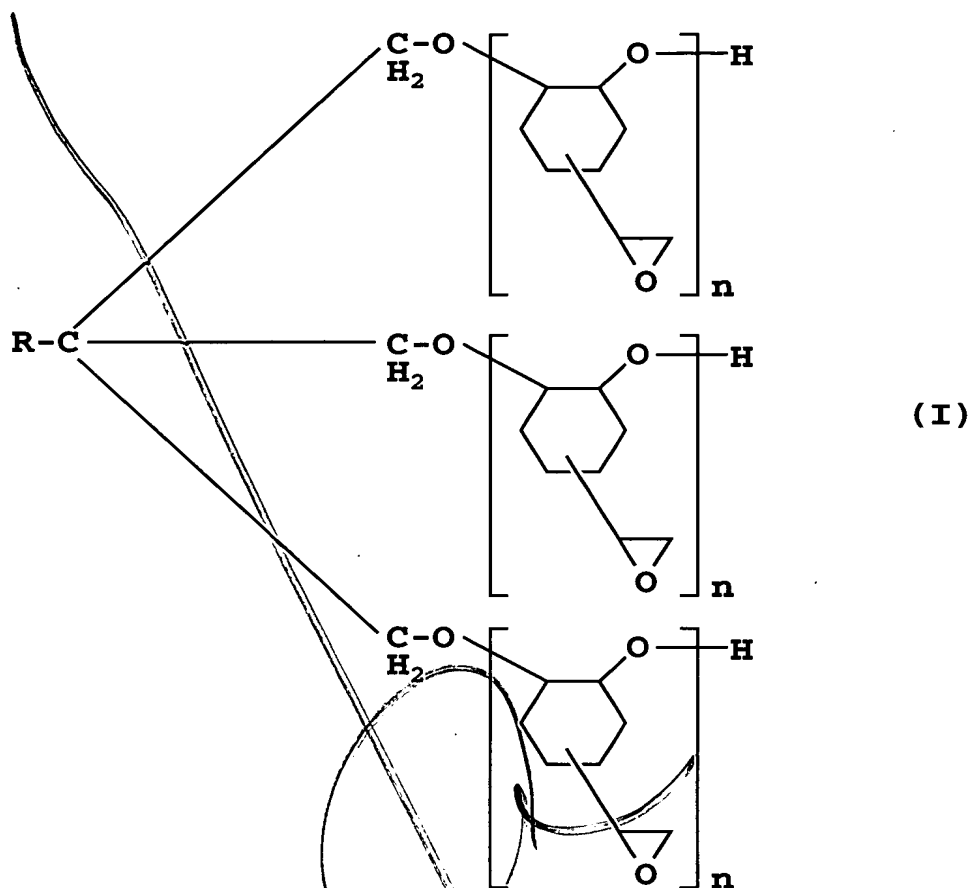


WHAT IS CLAIMED IS:

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1. An optical waveguide comprising a core or a
cladding which is a film of a polymer obtained by
5 ultraviolet curing a photosensitive substance,
wherein the photosensitive substance comprises a
mixture of two or more of reactive oligomers and a
photopolymerization initiator, the reactive
oligomers each contains at least one epoxy ring, at
10 least one of the reactive oligomers in the mixture
contains an aromatic ring, the refractive index of
the polymer can be controlled by changing the
content of the at least one reactive oligomer, and
the photosensitive substance has a viscosity
15 adjusted to 500 cps to 10,000 cps.
2. The optical waveguide as claimed in claim 1,
wherein one of the reactive oligomers constituting
the photosensitive substance is expressed by the
20 following general formula (I)

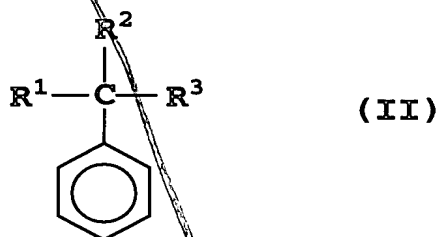


where R is C_mX_{2m+1} , where m is a natural number, and X is a hydrogen atom, a heavy hydrogen atom, or a halogen group, and n is a natural number,

5 and the viscosity of the photosensitive substance can be adjusted by changing the content of the one reactive oligomer.

3. The optical waveguide as claimed in claim 1,
10 wherein the at least one reactive oligomer constituting the photosensitive substance contains

the aromatic ring of the following general formula
(II)



5 where R^1 , R^2 and R^3 are C_mX_{2m+1} or $C_6X_{5-n}Y_n$, where
m and n are each a natural number, and X and Y are a
hydrogen atom, a heavy hydrogen atom, or a halogen
group, and R^1 , R^2 and R^3 each have at least one epoxy
ring, and the refractive index of the polymer has
10 been controlled by changing the content of the at
least one reactive oligomer.

4. A method for producing an optical waveguide,
comprising:

15 forming an under cladding layer from a film of a
polymer prepared by irradiating a photosensitive
substance with light, said photosensitive substance
being the photosensitive substance described in
claim 1, or a photosensitive substance containing
20 the reactive oligomer of the general formula (I), or
a photosensitive substance containing the reactive
oligomer of the general formula (II);

the forming on the under cladding layer a layer of the photosensitive substance described in claim 1, or a photosensitive substance containing the reactive oligomer of the general formula (I), or a
5 photosensitive substance containing the reactive oligomer of the general formula (II), each photosensitive substance being to have a refractive index adjusted to become higher than that of the under cladding layer when polymerized by irradiation
10 with light;

irradiating the layer of the photosensitive substance with condensed light through a mask, or directly, to form a latent image in a pattern form, followed by removing non-irradiated areas with a
15 solvent to form a pattern for use as a core portion for passage of light; and

then coating the core portion, and an upper portion in the surroundings thereof, with the photosensitive substance described in claim 1, or a
20 photosensitive substance containing the reactive oligomer of the general formula (I), or a photosensitive substance containing the reactive oligomer of the general formula (II), each photosensitive substance being to have a refractive
25 index adjusted to become lower than that of the core portion when polymerized, and polymerizing the

coated photosensitive substance by irradiation with
ultraviolet light to form an upper cladding layer.

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